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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,103	03/22/2002	Takanao Uchida	106145-00034	5036

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EXAMINER

RAPP, CHAD

ART UNIT PAPER NUMBER

2125

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,103

Applicant(s)

UCHIDA ET AL.

Examiner

Chad Rapp

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 5, 8 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 1-15 are presented for examination.

Allowable Subject Matter

2. Claims 5, 8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Cline et al.

Weber et al. teaches the claimed invention(claim 1) substantially as claimed including a design method of a product with three-dimensional model comprising:

- a. A CAE analysis is performed for said three-dimensional CAM model is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29);
- b. The drawings of the product are prepared with results of said CAE analysis is taught as an occupant interactions are determined and these interactions are reported or display to a user(col. 6 lines 19-67).

Weber teaches the above listed details of independent claim 1, however, Weber does not teach: a three-dimensional CAM model is prepared.

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Cline et al. teaches :

a. A three-dimensional CAM model is prepared is taught as a CAD/CAM model format is marching cubes. The marching cubes system is wire mesh, which is a three-dimensional shape of a product(col. 1 line 57 to col. 2 line 2, col. 2 lines 26-31 and col. 5 line 60 to col. 6 line 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Cline et al. because the computer modeling in Cline et al. is very desirable because it is easily displayed on different graphic displays. It makes the system very versatile.

As to claim 4, Weber et al. teaches wherein the CAE analysis is performed in a three-dimensional CAD system is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Sferro et al.

Weber et al. and Cline et al. teach the claimed invention(claim 1) substantially as claimed see paragraph number 4 above.

As to claim 6, Sferro et al. teaches wherein the CAE analysis is one of stress analysis, port flow analysis, thermal conduction analysis and combustion analysis is taught as the drawings are analyzed by stress analysis(col. 1 lines 14-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Sferro et al. because it brings in a

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process by which not only the scientific principles of all disciplines that bear on the engineering project, along with engineering and business history or constraints of similar projects to be able to make design judgments with a fraction of the time that is reduction in errors.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Cline et al.

Weber et al. teaches the claimed invention(claim 2) substantially as claimed including a design method of a product with three-dimensional model comprising:

- a. A second step to perform a CAE analysis for said three-dimensional CAM model is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29);
- b. A third step to correct said three-dimensional CAM model on the basis of said CAE analysis if defects exist is taught as an adjustment to the vehicle design(col. 7 lines 14-22);
- c. A fourth step to manufacture a trial product on the basis of said three-dimensional CAM model is taught as the three-dimensional “buck”(a physical representation) is used(col. 1 lines 25-42);
- d. A fifth step to test said trial product is taught as methods are used to determine whether a proposed design(buck) meets human factors(col. 1 lines 25-42);

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e. A sixth step to prepare drawings on the basis of results of said test is taught as regeneration of the entire vehicle design is electronically performed(col. 7 lines 14-22).

Weber teaches the above listed details of independent claim 2, however, Weber does not teach: a first step to prepare three-dimensional CAM model.

Cline et al. teaches :

a. A first step to prepare a three-dimensional Cam model is taught as a CAD/CAM model format is marching cubes. The marching cubes system is wire mesh, which is a three-dimensional shape of a product(col. 1 line 57 to col. 2 line 2, col. 2 lines 26-31 and col. 5 line 60 to col. 6 line 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Cline et al. because the computer modeling in Cline et al. is very desirable because it is easily displayed on different graphic displays. It makes the system very versatile.

As to claim 7, Weber et al. teaches wherein the CAE analysis is performed in a three-dimensional CAD system is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Sferro et al.

Weber et al. and Cline et al. teach the claimed invention(claim 2) substantially as claimed see paragraph number 7 above.

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As to claim 9, Sferro et al. teaches wherein the CAE analysis is one of stress analysis, port flow analysis, thermal conduction analysis and combustion analysis is taught as the drawings are analyzed by stress analysis(col. 1 lines 14-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Sferro et al. because it brings in a process by which not only the scientific principles of all disciplines that bear on the engineering project, along with engineering and business history or constraints of similar projects to be able to make design judgments with a fraction of the time that is a reduction of errors.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Cline et al.

Weber et al. teaches the claimed invention(claim 3) substantially as claimed including a design method of a product with three-dimensional model comprising:

a. A second step to perform a CAE analysis for said three-dimensional CAM model is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29);

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- b. A third step to correct said three-dimensional CAM model on the basis of said CAE analysis if defects exist is taught as an adjustment to the vehicle design(col. 7 lines 14-22);
- c. A fourth step to manufacture a trial product on the basis of said three-dimensional CAM model is taught as the three-dimensional “buck”(a physical representation) is used(col. 1 lines 25-42);
- d. A fifth step to test said trial product is taught as methods are used to determine whether a proposed design(buck) meets human factors(col. 1 lines 25-42);
- e. A sixth step to correct said three-dimensional Cam model on the basis on results of said test if the defects exist is taught as an adjustment to the vehicle design(col. 7 lines 14-22);
- f. A seventh step to iterate said fourth through sixth steps until the defects are solved is taught as the variations can be iteratively accomplished until human factors are met(col. 7 line 1-13);
- g. An eighth step to prepare the drawings on the basis of the three-dimensional CAM model obtained at said seventh step is taught as regeneration of the entire vehicle design is electronically performed(col. 7 lines 14-22).

Weber teaches the above listed details of independent claim 2, however, Weber does not teach: a first step to prepare three-dimensional CAM model.

Cline et al. teaches :

- a. A first step to prepare a three-dimensional Cam model is taught as a CAD/CAM model format is marching cubes. The marching cubes system is wire mesh, which is a three-dimensional shape of a product(col. 1 line 57 to col. 2 line 2, col. 2 lines 26-31 and col. 5 line 60 to col. 6 line 12).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Cline et al. because the computer modeling in Cline et al. is very desirable because it is easily displayed on different graphic displays. It makes the system very versatile.

As to claim 10, Weber et al. teaches wherein the CAE analysis is performed in a three-dimensional CAD system is taught as a vehicle method system which supports a computer aided CAE(col. 2 lines 27-29).

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. in view of Sferro et al.

Weber et al. and Cline et al. teach the claimed invention(claim 3) substantially as claimed see paragraph number 10 above.

As to claim 6, Sferro et al. teaches wherein the CAE analysis is one of stress analysis, port flow analysis, thermal conduction analysis and combustion analysis is taught as the drawings are analyzed by stress analysis(col. 1 lines 14-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made or used to modify Weber et al. with the teachings of Sferro et al. because it brings in a process by which not only the scientific principles of all disciplines that bear on the engineering project, along with engineering and business history or constraints of similar projects to be able to make design judgments with a fraction of the time that is a reduction of errors.

Conclusion

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Rapp whose telephone number is (703)306-4528. The examiner can normally be reached on Mon-Fri 11:00-7:00.

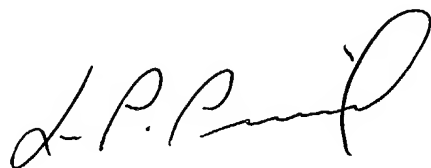
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703)308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

13. Note examiner Chad Rapp will be moving to the new complex in Alexandria, VA. on October 13th. Examiners new phone number will be (571)272-3752.

Chad Rapp
Examiner
Art Unit 2125

Cjr



LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100